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反应堆工程

池式快堆系统分析软件稳态功能开发

陆道纲[1];隋丹婷[1];任丽霞[2];钱鸿涛[2];田璐[1]

1.华北电力大学 核科学与工程学院，北京102206 2.中国原子能科学研究院 中国实验快堆工程部，北京102413

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摘要 针对目前我国快堆系统分析软件主要采用国外引进方式而导致难以掌握核心物理模型的现状，以中国实验快堆(CEFR)为研究和建模对象，基于中子动力学模型、堆芯及其热钠池模型、中间热交换器模型、一回路和中间回路热量传输系统模型、三回路模型等，自主开发了基于Compaq Visual Fortran(CVF)的适用于稳态计算的池式快堆系统分析软件SAC-CFR。通过与中国实验快堆安全分析报告中数据进行对比，验证了所开发模型的精度，为下一步瞬态模型的开发及控制和保护系统的开发做准备。

关键词 SAC-CFR 系统分析 中国实验快堆

分类号

Development of System Analysis Code for Pool-Type Fast Reactor Under Steady State Operation

LU Dao-gang[1];SUI Dan-ting[1];REN Li-xia[2];QIAN Hong-tao[2];TIAN Lu[1]

1.School of Nuclear Science and Engineering, North China Electric Power University, Beijing 102206, China; 2.China Institute of Atomic Energy, P. O. Box 275-34, Beijing 102413, China

Abstract Aiming at developing system analysis code independently, a system analysis code for pool-type fast reactor in China (SAC-CFR), with neutron kinetics model, core and hot pool model, intermediate heat exchanger model, primary and intermediate heat transport system, steam generation system, was developed based on Compaq Visual Fortran (CVF) to analyze the thermal-hydraulic characteristic of fast reactor under steady state operation. The simulation results of China Experimental Fast Reactor (CEFR) with SAC-CFR were compared with those in CEFR safety analysis report. The good agreements between them show that the present model is effective, which makes preparations for further development of transient model and plant protection and plant control system.

Key words SAC-CFR system analysis China Experimental Fast Reactor

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